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(54) **OPTICAL CIRCUIT**

(57) Abstract:

PURPOSE: To obtain the optical circuit which provide high distance resolution loss over a wide measurement distance range and generates a frequency- modulated light wave for light frequency band reflection measurement.

CONSTITUTION: A frequency shifter 12, an optical switch 13, and an optical amplifier 14 are connected in order to the output port OUT₂ of an optical directional coupler 11, and the optical amplifier 14 is connected to an input port IN₂ to form an optical loop circuit. An optical modulator 15 which modulates continuous light from a light source 16 into repetitive pulse light is connected to an input port IN₁, and an external control system 17 synchronously controls the pulse signal outputted from the optical modulator 15 and the ON/OFF state of the optical switch 13 to obtain an external output from an output port OUT₁.

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